EPA Follow-on Comments based on the September 8, 2015 Response to DEQ and EPA Comments on the Lakeside Site Source Control Evaluation (SCE), December 2013, Lakeside Industries, ECSI #2372, prepared by Pacific Groundwater Group and Hahn and Associates, Inc.

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Pacific Groundwater Group's response to EPA General Comment #1 provides considerable additional evaluation to explain why the detections of chlorinated volatile organic compounds (VOCs) in groundwater near the former Lakeside maintenance shop Drywell #1 (UIC #3, boring P8) are from the 1,1-trichloroethane (1,1,1-TCA) plume originating upgradient of the Lakeside property. The main points of PGG's evaluation are:

1. Chlorinated VOCs detected in groundwater at the Lakeside property are all from the 1,1,1-TCA plume originating upgradient of the Lakeside property .

2. The unique contaminant signature (low 1,1,1-TCA to 1,1,2-TCA ratio) observed at Lakeside boring P-8 do not point to a separate source on the Lakeside property but are due to differential anaerobic biodegradation and abiotic degradation rates of each of these two compounds and the increased removal of these two compounds from groundwater on the upgradient property due to operation of the groundwater extraction and the air sparge/soil vapor extraction treatment system (AS/SVE). P-8 is outside of the radius of influence of the AS/SVE system.

3. The vertical concentration profile at Lakeside boring P-8 of high 1,1,2-TCA concentrations in shallow groundwater and low concentrations in deeper groundwater is not indicative of a 1,1,2-TCA source on the Lakeside property but is due to higher groundwater velocity in the deeper groundwater (gravel unit) and the influence of the WEX-60 extraction well on the deeper groundwater at P-8.

This new evaluation was not presented in the Source Control Report (SCE), but it supports the idea that chlorinated VOC detections at P-8 are related to the Gunderson property source. Such evaluation would be a useful addition to the SCE.

PGG's September 8, 2015 comments state that concentrations at the downgradient side of the Lakeside property have decreased to a level that prompted DEQ's approval for the shutdown of the groundwater extraction system and transition to compliance monitoring. While PGG's evaluation supports the concept of an upgradient source for the chlorinated VOC detections at P-8, data gaps still exist at this location that are not explained by PGG's evaluation. For example, 1,1,2-TCA is considered a primary source contaminant and the concentration of this compound at P-8 is higher than at any other location at the Lakeside and upgradient property (including the period prior to start-up of the AS/SVE system on the upgradient property). As stated in EPA's previous comments, no permanent groundwater monitoring wells were installed at boring location P-8 or the nearby leach line to evaluate the potential for a chlorinated VOC source in this location and groundwater contamination in this area remains a data gap. However, as reported in PGG's comments, VOC concentrations in groundwater downgradient of P-8 are decreasing.

As part of the groundwater monitoring plan for the Lakeside property and the 1,1,1-TCA plume originating at the upgradient property, EPA recommends ongoing groundwater monitoring at the downgradient wells MW-43 and MW-50. If future monitoring indicates significant increases in chlorinated VOC concentrations at these wells that are not explained by the shutdown or operation of the groundwater treatment system on the upgradient property, then further assessment of groundwater near P-8 would be needed.